

IN THE CLAIMS:

1. (currently amended) An interactive digital music device comprising:
programmable memory for storing digital audio data and voice samples;
a receiver for obtaining external sound signals;
means for playing the stored audio and voice samples and external sound signals;
a processor, wherein the processor executes automatic musical composition instructions, wherein an automatically composed musical composition is concurrently generated and played back; and
means for selectively combining for playback, under control of the processor, the external sound signals with the automatically composed musical composition and stored audio data and voice samples, wherein an audio output from the device is produced.
2. (previously presented) The interactive digital music device of claim 1, further comprising means for providing visual effects complementing the audio output from the device.
3. (previously presented) The interactive digital music device of claim 2, wherein the means for providing visual effects comprises visual means for providing written song lyrics.
4. (previously presented) The interactive digital music device of claim 2, wherein the means for providing visual effects, comprises visual means for providing complimentary light patterns for the audio output from the device.
5. (previously presented) The interactive digital music device of claim 1, wherein the programmable memory comprises flash memory.
6. (canceled)
7. (currently amended) An Automatic Composer in a digital multi-media device for composing a musical piece according to automatic composition instructions and for mixing sound samples into the automatically composed musical piece, comprising:
a processor having an input and an output, the processor operating to execute the automatic composition instructions, wherein automatically composed music is generated during playback;

a first memory storing a music database for use in accordance with the automatic composition instructions, wherein the music database is accessed during execution of the automatic composition instructions;

a second memory storing the sound samples, wherein the first and second memories are connected to the processor input, wherein a music synthesizer is connected to the processor output for control by the processor and providing a synthesizer output; and

a summation and digital to analog conversion circuit, wherein the summation and digital to analog conversion circuit receives the processor and synthesizer outputs and provides a summed analog output.

8. (previously presented) The Automatic Composer of claim 7, wherein the summation and digital to analog conversion circuit comprises a digital to analog converter that receives the synthesizer and processor outputs and provides analog signals, and a second summation circuit that receives the analog signals.

9. (previously presented) The Automatic Composer of claim 7, wherein the summation and digital to analog circuit comprises a digital adder that sums the processor and synthesizer outputs and provides a summed digital output, and a digital to analog converter that receives the summed digital output.

10. (previously presented) The Automatic Composer of claim 9, wherein the digital adder is integral to the processor.

11. (previously presented) The Automatic Composer of claim 9, wherein the digital adder is integral to the synthesizer.

12. (previously presented) The Automatic Composer of claim 7, wherein the synthesizer comprises a second processor that accesses the second memory storing sound samples, and wherein the synthesizer processes the sound samples as a special case of basic instrumental sounds.

13. (previously presented) The Automatic Composer of claim 7, further comprising a microphone for recording external sound samples, and means for starting and stopping recording.

14. (previously presented) The Automatic Composer of claim 13, further comprising means for automatically eliminating the silent periods that precede and follow a portion of a recording, and means for implementing a speech compression algorithm to compress the portion of the recording.

15. (previously presented) The Automatic Composer of claim 7, wherein the processor comprises:

means for integrating the sound samples into musical compositions;

means for functioning to select the sound samples according to a pseudo-random sequence;

means for directing at least certain of the sound samples to be played at a predetermined time between the beginning and the end of a musical bar as governed by one or more musical rules;

means for directing a portion of the at least certain of the sound samples to be played from its entirety to any part thereof; and

means for optionally selecting repetition of the at least certain sound samples.

16. (previously presented) The Automatic Composer of claim 7, wherein the processor comprises means for imparting special effects to the musical piece, whereby the musical piece is optionally modified with any one or more of echo, vibrato, distortion, frequency modulation, and filtering effects.

17. (previously presented) The Automatic Composer of claim 7, wherein the processor comprises a clock operating at 25 MHz maximum, and wherein the first memory and the second memory comprise a memory having a capacity of 2 MB maximum.